SEC. 87.401, CUTS -- MAXIMUM SLOPE.

- (a) Major Slopes. The average slope of each cut surface resulting in a major slope shall not be steeper than two horizontal to one vertical exclusive of benches and exclusive of roundings described in subsection (c) unless the County Official approves such steeper slope after receipt of a report by a soil engineer certifying that he has investigated the property and that in his opinion the proposed steeper slope will be stable and will not endanger any public or private property or result in the deposition of debris on any public way or interfere with any existing drainage course and either of the following: (1) a report by a landscape architect certifying that such steeper slope, considering the nature of the soils on the slope surface, will support the proposed planting by maturity without significant or excessive erosion; or (2) a finding by the County Engineer that the material comprising the cut surface is rock or a material similarly difficult to shape such that construction of a two to one slope would impose an unreasonable burden on the permittee. The County Official may require at any time that the excavation be made with a cut face flatter in average slope than two horizontal to one vertical or require such other measures as he deems necessary to stability and safety.
- (b) Cuts resulting in minor slopes shall not be steeper in slope than one and one half horizontal to one vertical unless the County Official approves such steeper slope after receipt of a report by a soil engineer certifying that he has investigated the property and that in his opinion the proposed steeper slope will be stable and will not endanger any public or private property or result in the deposition of debris on any public way or interfere with any existing drainage course.
- (c) All cut slopes which are major slopes shall be rounded into the existing terrain to produce a contoured transition from cut face to natural ground and abutting cut or fill surfaces where conditions permit.
- (d) The application of this section to borrow pits shall be limited to the final slopes thereof.

(Amended by Ord. No. 3945 (N.S.), effective 9-14-72)

SEC. 87.402. CUTS -- DRAINAGE TERRACES ON CUT SLOPES EXCEEDING 40 FEET.

All cut slopes exceeding forty feet (40') in vertical height shall have drainage terraces at vertical intervals not exceeding thirty feet (30') except that where only one terrace is required, it shall be at approximately mid-height unless some other location is approved by the County Official. Such drainage terraces shall be at least six feet (6') wide and be designed and constructed so as to provide a swale or ditch having a minimum depth of one foot (1') and a minimum grade of two percent (2%) unless a flatter grade is approved by the County Official. The terrace including the swale or ditch shall be constructed in such a manner as to provide a paved drainage way based upon the need as determined by the slope, wetted perimeter and discharge that drains into a paved gutter, pipe or other safe disposal area. Such drainage terraces including the swales and ditches shall be paved with a minimum thickness of three inches (3") of portland cement concrete, or with two inches (2") of pneumatically applied concrete mortar, or shall be improved with other materials or with other treatment approved by the County Official as equal. If the drainage discharges onto natural ground, the County Official may require that such natural ground be protected from erosion by an adequate amount of riprap. Drainage terraces or the paving thereof may be waived by the County Official after receipt of the report by the soil engineer certifying that he has investigated the property and that in the engineer's opinion drainage terraces or paving is unnecessary.

(Amended by Ord. No. 3281 (N.S.), effective 1-22-69)

SEC. 87.403. CUTS -- EXPANSIVE SOILS.

In the event during the grading operation expansive soil is found within two feet (2') of the finished lot grade of any area intended or designed as the location for a building, the permittee shall cause such expansive soil to be removed from such building area to a depth specified by the County Official and replaced with nonexpansive soil properly compacted; provided, however, the County Official may, upon receipt of a report by a soil engineer certifying that he has investigated the property and recommending a design of footings or floor slab or other procedure that in his opinion will alleviate any problem created by such expansive soil, waive the requirement that such expansive soil be removed and replaced with nonexpansive soil.

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SEC. 87.404. FILLS -- COMPACTION.

All fills shall be compacted to a minimum of ninety percent (90%) of maximum density as determined in the laboratory by the American Society for Testing Materials D-1557-64T test or modification thereof approved by the County Official provided that the compactive energy of the test shall not be less than 35,000 foot-pounds per cubic foot. Field density shall be determined by the American Society for Testing Materials D-1556-58T method or an equivalent test approved by the County Official. Lower degrees of compaction may be permitted by the County Official after he receives a soil engineer's report certifying that the soil engineer has investigated the property, made soil tests, and that in the engineer's opinion such lower degree of compaction will be adequate for the intended use of the property which use shall be described in the report.

(Amended by Ord. No. 3281 (N.S.), effective 1-22-69)

SEC. 87.405. FILLS -- PREPARATION OF GROUND.

The natural ground surface shall be prepared to receive fill by removing vegetation, non-complying fill, unsuitable soil, and, where slopes are five horizontal to one vertical or steeper, by benching into material approved by the soil engineer or, if none, by the County Official.

SEC. 87.406. FILLS -- MAXIMUM SLOPE.

- (a) No fill shall be made which creates an exposed surface steeper in average slope than two horizontal to one vertical exclusive of benches and exclusive of roundings described in subsection (c) unless permitted by the County Official after receipt of a report from a landscape architect certifying that such steeper slope, considering the nature of the soils on the slope surface, will support the proposed planting to maturity without significant or excessive erosion and a report by a soil engineer certifying that he has investigated the property and that in the engineer's opinion such steeper slope will be stable and will not endanger any public or private property or result in the deposition of debris in any public way or interfere with any existing drainage course.
- (b) The County Official may require that the fill be constructed with an exposed surface flatter than two horizontal to one vertical or may require such other measures as he deems necessary for stability and safety.
- (c) All fill slopes which are major slopes shall be rounded into the existing terrain to produce a contoured transition from fill face to natural ground and abutting cut or fill surfaces where conditions permit.

(Amended by Ord. No. 3945 (N.S.), effective 9-14-72)

SEC. 87.407. FILLS -- MATERIALS.

- (a) No organic material shall be permitted in fills.
- (b) No rock or similar irreducible material with a maximum dimension greater than eight inches (8") shall be buried or placed in any fill unless permitted by the County Official after receipt of a report by a soil engineer certifying that he has investigated the property and the fill material and that a fill including such greater size material may be constructed to meet the requirements of this division. When such greater size material is placed in fills it shall be done under the direction and supervision of a soil engineer.

SEC. 87.407.1. SCREENING AND MIXING.

Unless specifically prohibited by the terms of the Grading Permit, materials excavated from any site for use thereon may be screened upon that site, and all materials which are to be placed as fill upon any site may be mixed upon that site.

(Added by Ord. No. 3792 (N.S.), effective 12-17-71)

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SEC. 87.408. FILLS -- DRAINAGE TERRACES ON FILL SLOPES EXCEEDING 40

All fill slopes exceeding forty feet (40') in vertical height shall have drainage terraces at vertical intervals not exceeding thirty feet (30') except that where only one terrace is required, it shall be at approximately mid-height unless some other location is approved by the County Official. Such drainage terraces shall be at least six feet (6') wide and shall be designed and constructed so as to provide a swale or ditch having a minimum depth of one foot (1') and a minimum grade of two percent (2%) unless a flatter grade is approved by the County Official. The terrace including the swale or ditch shall be paved in such a manner as to provide a paved drainage way based upon the needs as determined by the slope, wetted perimeter and discharge that drains into the paved gutter, pipe or safe disposal area. Such drainage terraces including the swales and ditches shall be paved with a minimum thickness of three inches (3"0) of portland cement concrete, or with two inches (2") of pneumatically applied concrete mortar or shall be improved with other material or by other treatment approved by the County Official as equal. If the drainage discharges onto natural ground, the County Official may require that such natural ground be protected from erosion by an adequate amount of riprap. Drainage terraces or the paving thereof may be waived by the County Official after he receives a soil engineer's report certifying that the soil engineer has investigated the property and that in the engineer's opinion the drainage terraces or paving is unnecessary.

(Amended by Ord. No. 3281 (N.S.), effective 1-22-69)

SEC. 87.409. FILLS -- SLOPES TO RECEIVE.

Fills toeing out on natural slopes which are steeper than two horizontal to one vertical shall not be made unless approved by the County Official after receipt of a report by a soil engineer certifying that he has investigated the property, made soil tests and that in his opinion such steeper slope will safely support the fill proposed to be made.

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SEC. 87.410. FILLS -- EXPANSIVE SOILS.

In areas intended or designed to support buildings expansive soil shall not be placed within three feet (3') of the finish grade in such building areas unless approved by the County Official after receipt of a report by a soil engineer certifying that he has investigated the property and recommended a design of footings or floor slab or other procedure that will alleviate any problem created by placing the expansive soil within such building areas.

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SEC. 87.411. FILLS -- STRUCTURAL ROCK.

Fills constructed predominantly of large rock will be permitted only if the specifications for such fill are prepared by and construction done under the direction and supervision of a soil engineer. Large rock fills will not be permitted within six feet (6') of finish grade or within two feet (2') of the bottom of any utility pipeline.

SEC. 87.412. SETBACKS.

- (a) Cuts and fills shall be set back from property lines and buildings shall be set back from cut or fill slopes in accordance with Figure No. 1 of this Section.
- (b) Fill placed above the top of an existing or proposed cut or above a natural slope steeper than three horizontal to one vertical shall be set back from the edge of the slope a minimum distance of six feet (6').
- (c) The setbacks established by this section are minimum and may be increased by the County Official if he deems it necessary for safety or stability or to prevent possible damage from water, soil or debris.
- (d) The County Official may reduce the required setback (1) where he determines the necessity for the setback eliminated or reduced by the construction of retaining walls or because the owner has the right to extend slopes onto the adjacent property; or (2) after receipt of a report by a soil engineer certifying that he has investigated the property and that in the engineer's opinion the reduction in the setback will not endanger any public or private property or result in the deposition of debris on any public way or interfere with any existing drainage course.

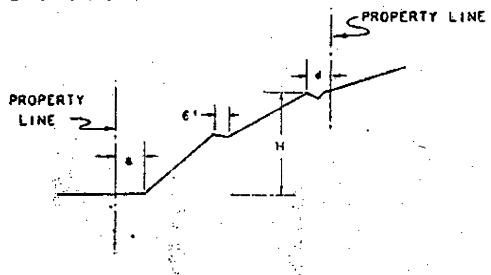
FIGURE NO. 1, REQUIRED SETBACKS

FIGURE NO. 1

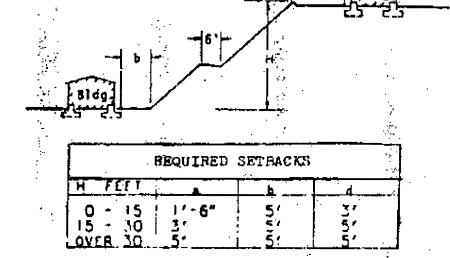
REQUIRED

SETBACKS

A: PROPERTY LINE SETBACKS:



B: BUILDING SETBACKS:



SEC. 87.413. DRAINAGE -- DISPOSAL.

- (a) The ponding of water shall not be permitted above cut or fill slopes or on drainage terraces. Adequate drainage facilities shall be provided to prevent such ponding.
- (b) All drainage facilities shall be designed to carry surface waters to the nearest practical street, storm drain, or other watercourse approved by the County Official or other appropriate governmental agency.

SEC. 87.414. DRAINAGE -- EROSION PREVENTION.

The permittee and the owner shall make adequate provisions to prevent any surface waters from damaging the face of any excavation or fill. All slopes shall be protected from surface water runoff from above by berms, swales or brow ditches unless the County Official determines such berms, swales or brow ditches are unnecessary to provide such protection and waives this requirement.

SEC. 87.415. DRAINAGE -- BUILDING PADS.

All areas designed for buildings shall be graded to provide at least one percent grade toward the approved disposal area unless waived by the County Official where the terrain is so flat as to make such grade unnecessary or impractical.

SEC. 87.416. DRAINAGE -- DRAINAGE FACILITIES.

- (a) All berms, swales and brow ditches shall be designed and constructed, and when required, shall be paved or otherwise improved to the satisfaction of the County Official.
- (b) Except as otherwise provided in Sections 87.402 and 87.408, all swales and ditches shall have a minimum grade of two percent (2%), a minimum depth of one foot (1') and shall be paved for a width of at least three feet (3') with a minimum thickness of three inches (3") of the portland cement concrete or two inches (2") of pneumatically applied concrete mortar or shall be improved with other material or by other treatment approved by the County Official as equal. The paving of such swales or ditches may be waived by the County Official after receipt of a report by a soil engineer certifying that in the engineer's opinion the paving is unnecessary.
- (c) If the drainage discharges onto natural ground, the County Official may require that such natural ground be protected from erosion by an adequate amount of riprap.

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SEC. 87.417. PLANTING.

- (a) General. The face of all cut and fill slopes, in excess of 3 feet in vertical height, but only final slopes of any borrow pit, shall be planted and maintained with a ground cover or other planting to protect the slopes against erosion and instability. Planting shall commence as soon as slopes are completed on any portion of the site and shall be established upon all slopes prior to the final approval of the grading. In order to minimize the period during which a cut or filled surface remains exposed, such planting shall provide for rapid short term coverage of the slope as well as long term permanent coverage. Planting materials and procedures shall conform to regulations adopted by the County Engineer and approved by the Board of Supervisors. Other plant materials as specified by a landscape architect may be approved by the County Engineer. The permittee shall maintain such planting until it is well established as determined by the County Official.
- (b) <u>Minimum Requirements</u>. In addition to planting with ground cover, slopes in excess of fifteen (15) feet in vertical height shall be planted with shrubs in 2-1/4 inch pots or trees having a one (1) gallon minimum size at ten (10) feet on center in both directions on the slope. The plant and planting pattern, but not the quantity, may be varied upon the recommendation of landscape architect and approval by the County Engineer.
- (c) Where cut slopes are not subject to erosion due to their rocky character or where the slopes are protected with pneumatically applied concrete mortar or otherwise treated to protect against erosion and instability to the satisfaction of the County Official, the requirement of this section may be waived by the County Official.

(Amended by Ord. No. 3945 (N.S.), effective 9-14-72)

SEC. 87.417.5. IRRIGATION SYSTEM REQUIREMENTS.

(a) General. Except for agricultural grading permits, all slopes to be constructed, but only final slopes of any borrow pit, shall be provided with an irrigation system which shall be used by the permittee to promote the growth of plants to protect the slopes against erosion. The permittee shall be responsible for installation and maintenance of the irrigation system until the County Engineer determines that the system has been properly installed and meets the minimum requirements of this section. When the County Engineer finds that a slope less than fifteen (15) feet in height is located in an area as to make hand watering possible, conveniently located hose bibs may be accepted in lieu of the required irrigation system when a hose no longer than fifty (50) feet would be required.

(b) Minimum Requirements.

- (1) Plans for the irrigation system shall be in accordance with County of San Diego Standard Specifications for Sprinkler Irrigation Systems and shall be approved by the County Engineer prior to installation.
- (2) The irrigation system shall be located relative to existing and proposed property lines to insure that the irrigation system and the slopes sprinkled thereby will both be within the same property boundaries. The irrigation system shall be supplied or be readily converted so as to be supplied through the metered water service line serving each individual property.
- (3) The irrigation system shall provide uniform coverage for the slope area at a rate of not less than 0.03 inches per hour, nor greater than 0.30 inches per hour. A functional test of the irrigation systems shall be performed to the satisfaction of the County Engineer prior to final approval of the grading.
- (4) A check valve and balance cock shall be installed in the system where drainage from sprinkler heads will create an erosion problem.
- (5) Adequate back flow protection devices shall be installed in each irrigation system. Such devices shall be protected against physical damage during construction operations.

(c) In the event the planting requirements specified in Section 87.417(c) are waived by the County Engineer, the requirements specified in this section may be waived by the County Engineer.

(Added by Ord. No. 3945 (N.S.), effective 9-14-72)

SEC. 87.417.6. WAIVER OF PLANTING AND IRRIGATION REQUIREMENTS.

The County Engineer may modify or waive the requirements for planting and/or irrigation systems if he finds that said requirements would be unreasonable or unnecessary for any of the following reasons:

- (a) the area is subject to periodic inundation, or
- (b) water is unavailable to the area such that irrigation would be impractical or impossible, or
- (c) the area is naturally devoid of vegetation.

(Added by Ord. No. 3945 (N.S.), effective 9-14-72)

SEC. 87.418. SUPERVISED OR REGULAR GRADING REQUIRED.

- (a) All grading, except grading for a borrow pit, in excess of 5,000 cubic yards shall be performed under the general supervision and coordination of a civil engineer hired by the applicant, who shall assume and perform the duties specified in Section 87.420 throughout grading operations until completion and approval of all work pursuant to Section 87.426. Such grading shall be designated "supervised grading."
- (b) Grading not supervised in accordance with this section shall be designated "regular grading."
- (c) For grading of 5,000 cubic yards or less, the permittee may elect to have the grading performed as either supervised grading or regular grading.

(Amended by Ord. No. 3999 (N.S.), effective 12-28-72; amended by Ord. No. 5129 (N.S.), effective 5-4-78; amended by Ord. No. 9315 (N.S.), effective 4-12-01)

SEC. 87.419. REGULAR GRADING REQUIREMENTS.

The following requirements are applicable to regular grading:

- (a) The County Official shall cause the work to be inspected to the extent he deems necessary and may require inspection of excavations and fills and compaction control by a soil engineer.
- (b) The County Official may require sufficient inspection by the soil engineer to assure that the soil engineer has adequately considered all geological conditions. These inspections may be required to include, but need not be limited to inspection of cut slopes, canyons during clearing operations for ground water and earth material conditions, benches prior to placement of fill, and possible spring locations. Where geologic conditions warrant, the County Official may require periodic geologic reports.
- (c) Reports of a soil engineer certifying the compaction or acceptability of all fills shall be filed with the County Official. The reports shall include but need not be limited to: (1) inspection of cleared areas and benches prepared to receive fill and removal of all soil and unsuitable materials; (2) the placement and compaction of fill materials; (3) the bearing capacity of the fill to support structures; (4) the inspection or review of the construction of retaining walls, subdrains, drainage facilities and devices, buttress fills, and other similar measures; (5) excavation for and back filling of retaining walls; (6) where potentially expansive soils are present at either cut or fill grade, written recommendations regarding treatment given or to be given to such soils.

SEC. 87.420. SUPERVISED GRADING REQUIREMENTS.

The following requirements shall apply to "supervised grading" as referenced in Section 87.418:

- (a) Requirements Applicable to the Civil Engineer Supervising the Grading. It shall be the responsibility of the civil engineer supervising the grading to supervise and coordinate all field surveys, setting of grade stakes in conformance with the plans, and site inspection during grading operations to assure that the site is graded in accordance with the permit. This responsibility shall not include the superintendency of the contractor's equipment or personnel. The civil engineer supervising the grading shall file reports with the County Official, as follows:
- (i) Said reports shall be filed at the following intervals: weekly, during all times when grading operations are active on the site; monthly, at all other times; and at any time when requested in writing to do so by the County Official.
- (ii) Such reports shall certify to the County Official that the civil engineer supervising the grading has inspected the grading and related activities and has found them to substantially comply with the approved grading plans and the grading permit including any conditions thereof, except with regards to any areas of noncompliance which the engineer shall specify in detail. The reports shall contain all matters required by a standard Report of Grading Activities form which the County Official shall publish.
- (b) Other Requirements. Soils reports shall be required and geology reports may also be required as specified in Sections 87.419(b) and (c). In addition to the copies filed with the County Official, copies of such reports shall be sent by the permittee to the civil engineer supervising the grading. The soil engineer shall make such tests and inspections as necessary to assure that the recommendations given in the soils report and incorporated in the grading plan or specifications or the permit have been followed.

(Amended by Ord. No. 9315 (N.S.), effective 4-12-01)

SEC. 87.421. NOTIFICATION OF NONCOMPLIANCE.

If in the course of fulfilling his responsibility under this division, the supervising civil engineer or the soil engineer finds that the work is not being done in conformance with this division or the plans approved by the County Official, or in accordance with accepted practices, he shall immediately notify the permittee, the person in charge of the grading work and the County Official in writing of the nonconformity and of the corrective measures which should be taken.

SEC. 87.422. SAFETY PRECAUTIONS.

- (a) If at any stage of the work the County Official determines that further grading as authorized is likely to endanger any public or private property or result in the deposition of debris on any public way or interfere with any existing drainage course, the County Official may require as a condition to allowing the work to be continued, that such reasonable safety precautions be taken as he considers advisable to avoid such likelihood of danger.
- (b) In the event the work does not conform to the permit or the plans or specifications or any instructions of the County Official, notice to comply shall be given to the permittee in writing. After a notice to comply is given, a period of 10 days shall be allowed for the permittee or his contractor to begin to make the corrections, unless an imminent hazard exists, in which case the County Official may require that the corrective work begin immediately.
- (c) If the County Official finds any existing conditions not as stated in the application, grading permit or approved plans, he may refuse to approve further work until approval is obtained for a revised grading plan which will conform to the existing conditions.

SEC. 87.423. RESPONSIBILITY OF PERMITTEE -- COMPLIANCE WITH PLANS AND REQUIREMENTS.

All permits issued hereunder shall be deemed to include the provision that the permittee, his agent, contractors and employees, shall carry out the proposed work in accordance with the approved plans and specifications, where such approval is required, and in compliance with any applicable storm water pollution prevention plan (SWPPP) prepared and maintained pursuant to federal or state requirements or a County directive, and in compliance with all the requirements of the permit and this division. Failure to carry out the work in accordance with approved plans and specifications, the applicable SWPPP, and in compliance with all the requirements of the permit and this division shall be a violation of this division.

(Amended by Ord. No. 9343 (N.S.), effective 6-22-01)

SEC. 87.424. MODIFICATION OF APPROVED PLANS.

- (a) All modifications of the approved grading plan must be in writing and be approved by the County Official. All necessary soils and geological reports shall be submitted with any proposal to modify the approved grading plan.
- (b) No grading work in connection with any proposed modification shall be permitted without the approval of the County Official.

SEC. 87.425. COMPLETION OF WORK -- FINAL REPORTS.

Upon completion of the work the following reports shall be filed with the County Official unless waived by him:

- 1. A certification by a civil engineer that all grading, lot drainage, drainage facilities have been completed in conformance with the approved plans and specifications, the permit and this division. In making such certification the civil engineer does not assume responsibility for the correctness of the contents of the reports referred to in paragraphs 3 and 4 of this section.
 - 2. An as-built plan of the completed work prepared by a civil engineer.
- 3. A soil engineer's report which shall include certification of soil bearing capacity (except where the County Official determines such certification inapplicable), summaries of field and laboratory tests and location of tests if not previously submitted, and the limits of compacted fill on an "as-built" plan.

The report shall include reference to the presence of any expansive soils or other soil problems which, if not corrected, would lead to structural defects in buildings constructed on the site. If such report discloses the presence of such expansive soils or such other soil problems, it shall include recommended corrective action which is likely to prevent structural damage to each building proposed to be constructed upon the site.

4. A final engineering geology report by an engineering geologist based on the as-built plan including specific approval of the grading as affected by geological factors. Where required by the County Official, the report shall include a revised geologic map and cross sections and recommendations regarding building restrictions or foundation setbacks.

SEC. 87.426. NOTIFICATION OF COMPLETION.

The permittee shall notify the County Official when the grading operation is ready for final inspection. Final approval shall not be given until all work including installation of all drainage structures and facilities, sprinkler irrigation systems, and all protective devices have been completed and any required planting established and all as-built plans and reports have been submitted. The County Official may certify in writing to the completion of all work, or any portion of the work, required by the permit issued in accordance with this division and thereupon accept said work or portion thereof.

(Amended by Ord. No. 3945 (N.S.), effective 9-14-72)